



STS-83 is scheduled to lift off April 3 on a Microgravity Science Laboratory mission. Story on Page 3.



A variety of activities are in the works for JSC's Earth Day on April 22. Story on Page 4.

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JSC Photo 97-03791 by Robert Markowitz

From right, Boeing's Defense and Space Group Space Station Deputy Program Manager Bill Russell greets JSC Director George Abbey, Boeing President Alan Mulally and JSC Associate Director, Technical John Young to Ellington Field last week. Boeing's recently appointed president came to Houston in the new 777 to meet Houston employees.

Boeing president recognizes NASA contributions to aircraft technology

NASA cooperation is helping build bigger and better aircraft said Boeing Defense and Space Group President Alan Mulally when he flew into Ellington Field last week.

Mulally, JSC Director George Abbey and Associate Director, Technical John Young greeted a large crowd of NASA and Boeing employees after taking Boeing's newest 777 airliner for a flyover of JSC.

"Alan, I want to welcome you and the Triple 7 team to Houston," Abbey said. "We appreciate very much you coming down here and bringing a great Boeing product to Houston because we have a great Boeing team here that is working on the space station, which I hope will turn out as good as the Triple 7."

Mulally, named president in February, Please see **EMPLOYEES**, Page 4

Columbia ready to begin 16-day science mission

The countdown clocks at Kennedy Space Center are scheduled to begin ticking down at 1 p.m. CST on Monday for launch of *Columbia* on the STS-83 Microgravity Science Laboratory mission.

The upcoming 16-day flight will see the crew—Commander Jim Halsell, Pilot Susan Still, Mission Specialists Janet Voss, Mike Gernhardt and Don Thomas along with Payload Specialists Roger Crouch and Greg Linteris—conduct a variety of experiments to examine how various materials and liquids change and behave in the weightless environment of space.

The crew is expected to arrive at KSC's Shuttle Landing Facility around 1:30 p.m. CST on Monday and will spend the final days before launch reviewing flight plans, receiving weather and vehicle briefings and spending time with family members.

Columbia's two and a half hour launch window opens at 1:01 p.m. CST Thursday, April 3. With an on time launch on Thursday, *Columbia* will return to KSC at 6:19 a.m. April 19. Processing work this past week involved the loading of propellants into the orbiter's reaction control system and the start of aft engine compartment close out activities. Ordnance installation also was completed.

During 16 days in low-Earth orbit, the crew will conduct a variety of experiments and test hardware and procedures that will be used on the International Space Station. The Microgravity Science Laboratory will serve as a bridge between short duration work done on previous Spacelab flights and

long duration research that will be performed on the space station.

While launch preparations near completion on *Columbia*, work on the other two orbiters supporting active flight operations also is going well. Technicians will close *Atlantis'* payload bay doors on Monday. The orbiter will be moved to the Vehicle Assembly Bldg. next week to be mated to its solid rocket boosters and external tank. Rollout to the launch pad is currently planned for April 9.

Atlantis will fly mission STS-84, the sixth shuttle-Mir mission, in May. Astronaut Mike Foale, who will replace Jerry Linenger on the Russian Mir Space Station, is nearing completion of training in Russia. Foale is expected to return to the U.S. in early April for the final weeks of training with his shuttle crew mates—Commander Charlie Precourt, Pilot Eileen Collins and Mission Specialists Carlos Noriega, Edward Lu, Jean-François Clervoy, and Elena Kondakova.

Discovery continues to undergo normal post-flight inspections and servicing activities. This week, technicians removed *Discovery's* main engines and conducted functional checks of the forward reaction control system. *Discovery's* main engines are scheduled to be installed April 18 for its scheduled mission, STS-85, in July. *Discovery* will carry the CRISTA-SPAS-2 payload.

Structural inspections and modification work on *Endeavour* is complete and the orbiter was scheduled to return to KSC this week atop NASA's 747 Shuttle Carrier Aircraft from the Boeing North American facility in Palmdale, Calif.



New on-line database can reduce trouble-shooting work

JSC employees now have on-line access to some 500 "lessons learned," and can apply them to the work of today and tomorrow.

The new user-friendly database is called the Lessons Learned Information System, or LLIS, now found on the Internet at <http://envnet.gsfc.nasa.gov/ll/homepage.html>

"It is critical to retain hard-earned knowledge from past NASA programs in this period of reinvention, refined customer focus, buyouts and tightening budgets," said Ron Montague, JSC's center data manager. "The

LLIS currently emphasizes safety, reliability and quality assurance subjects pertinent to space flight programs. Lessons arising from operations as well as spaceflight are finding their homes in the LLIS."

The LLIS initially has been populated by lessons researched by field centers and the International Space Station program. There are about 500 lessons in the LLIS.

A lesson found in the LLIS will contain a description of the event, responses or corrective actions and evidence of recurrence control. The information is easily searched

on key words or categories. Lessons may contain illustrations, photographs and other similar graphics to complement and clarify the text. Users may use lessons as "think tanks" whenever new ideas and approaches are needed.

Users also may contribute lessons to the LLIS. Contributors are expected to be responsible for the technical accuracy. The process for screening lessons is provided and will generally become available to all users within five working days.

The LLIS is fully operational and is avail-

able to any NASA employee or contractor. International partners also are beginning to participate in the LLIS.

"While the assurance disciplines have piloted the LLIS concept, there is no reason why other disciplines such as research, engineering, operations, etc., cannot use the LLIS as well," Montague said.

JSC customers who find the LLIS useful in other disciplines or applications are encouraged to coordinate their requirements with Montague or Eric Raynor, the NASA Headquarters data manager.

New zones to protect pedestrians at JSC

Three new pedestrian crossing zones have been established at JSC to help drivers be on the look-out for workers walking around the center.

The zones—which limit vehicles to 20 miles an hour during parts of the day—are on Second Street, Fifth Street and Avenue B. Signs have been installed with flashing lights to identify these areas as pedestrian zones to provide additional safety and increase awareness of pedestrian traffic.

The locations were selected due to the large number of pedestrians using the crosswalks in these areas. The 20 mph speed limits are in

effect Monday through Friday from 7-9 a.m., 11a.m. -1 p.m. and 3:30-5:30 p.m.

The pedestrian zones were created in response to data that showed the majority of all traffic-related Close Call reports involve pedestrian crosswalks. The Executive Safety Committee became concerned for the safety of pedestrians at JSC and formed a Pedestrian Safety Committee, which studied and surveyed pedestrian safety problems and recommended solutions to the Executive Safety Committee. One recommendation was to establish the Pedestrian Crossing Zones.

**PEDESTRIAN
 ZONE
 AHEAD**



JSC Photo 97-03761 by Steve Candler

MOON VIEW—Participants in the 28th annual Lunar and Planetary conference, held last week at JSC, attend a poster session at the Gilruth Center. In the March 14 issue of the Space News Roundup, the Internet address of the conference was incorrect. The location to view complete abstracts presented during the conference is: <http://cass.jsc.nasa.gov/LPSC97>

Crew to talk about chamber test next Monday

Four JSC volunteers will tell what it was like to live and work for 60 days in a special air-tight JSC chamber at 3:30 p.m. Monday, March 31, in Teague Auditorium.

Crew Leader Terry Tri, Project Engineer Karen Meyers, Systems Engineer Fred Smith and Facilities Project Engineer Dave Staat will show a video and slides documenting their chamber stay. The test was the third phase of the Advanced Life Support Program Test Project that recycles air and water.

JSC Director George Abbey and Engineering Director Leonard Nicholson will present awards to team members and share plans for future extended duration tests. For more information, contact Helen Harris at x38413.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For details, call x35350 or x30990.

College football: Rice Owls vs. U.S. Air Force Academy Sept. 6. Tickets are \$7.

Bay Area Chorus: Spring Scholarship Concert at 4 p.m. April 27 at Clear Lake United Methodist Church. Tickets are \$10 for adults, \$5 for students and seniors.

JSC Picnic: 11 a.m.-8 p.m. April 6 at Astroworld. Tickets are \$15 for the first 3,100.

EAA cruises: Seven-day cruise to Alaska for \$1,294 per person May 23-31. Seven-day cruise to Caribbean leaving from Houston in November. Prices vary depending on cabin choices. For more information call Dick McMinimy at x34037.

Astroworld season pass: \$56.75, until March 31. Early bird tickets are \$18.25 and must be used by May 31.

Moody Gardens: Tickets are \$9.50 for 2 of 3 events.

Space Center Houston: Adult \$8.95; children (4-11) \$6.40.

Seaworld: Adult \$27.25; \$18.25 children(3-11).

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4.50; Sony Loew's Theater, \$4.75.

JSC logo shirts: Polo style, \$23. T-shirt, \$10.

Stamps: Book of 20, \$6.40.

Orbit: The book "Orbit" by Jay Apt, Mike Helfert and Justin Wilkinson is on sale for \$28.

Metro tickets: Passes, books and single tickets available.

JSC

Gilruth Center News

New Hours: The Gilruth Center will now remain open until 2 p.m. Saturday and close at 9 p.m. Friday.

EAA badges: Required for use of the Gilruth Center. Employees, spouses eligible dependents, NASA retirees and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 9 a.m.-1 p.m. Saturdays. Cost is \$10. Dependents must be between 16 and 23 years old.

NASA Fitness Challenge: runs through Aug. 31. Call x30301 for more information.

Complete Weight Control Program: starts April 1 with sessions on Monday, Wednesday and Friday. For more information call x30301 or x30302.

Hatha Yoga: A stress relieving, stretching and breathing exercise routine to unite body, mind and spirit. Classes meet from 5:30-6:30 p.m. Thursdays. Cost is \$40 for eight weeks.

Nutrition intervention program: A six-week program to learn more about the role diet and nutrition play in health, including lectures, private consultations with a dietitian and blood analysis. Program is open to all employees, contractors and spouses. For more information call Tammy Shaw at x32980.

Defensive driving: One-day course is offered once a month. Pre-registration required. Next class is March 22. Cost is \$25.

Stamp club: Meets at 7 p.m. every second and fourth Monday in Rm. 216.

Weight safety: Required courses for employees wishing to use the weight room will be offered from 8-9:30 p.m. April 10 and 24. Pre-registration is required. Cost is \$5. Annual weight room use fee is \$90. Additional family members are \$50.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24 for six weeks.

Aikido: Martial arts class meets from 5:15-6:15 p.m. Tuesday and Wednesday. Cost is \$35 per month. New classes begin the first of each month.

Aerobics: Classes meet from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32 for eight weeks.

Ballroom dancing: Beginner classes meet from 7-8:15 p.m. Thursdays. Intermediate and advanced classes meet from 8:15-9:30 p.m. Cost is \$60 per couple.

Country and Western dancing: Beginner class meets 7-8:30 p.m. Monday. Advance class meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

Fitness program: Health Related Fitness Program includes a medical screening examination and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

Gilruth Home Page: Check out all activities at the Gilruth online at: <http://www4.jsc.nasa.gov/ah/exceaa/Gilruth/Gilruth.htm>

JSC

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Dates & Data

Today

Cafeteria menu: Special: baked chicken. Total Health: roast beef au jus. Entrees: deviled crab, baked chicken, beef cannelloni, steamed pollock, Reuben sandwich. Soup: seafood gumbo. Vegetables: seasoned carrots, peas, breaded okra, steamed cauliflower.

Monday

Crew briefing: A four-person team will talk about their experience of living in a special air-tight chamber at JSC for 60 days at 3:30 p.m. Monday March 31 in Teague Auditorium. Terry Tri; Karen Meyers, Fred Smith and Dave Staat will discuss the Phase IIA-International Space Station Life Support Test, that uses physicochemical and biological methods to recycle air and water. For more information call Helen Harris at x38413.

Cafeteria menu: Special: hamburger steak. Total Health: vegetable lasagna. Entrees: beef Burgundy over noodles, barbecue smoked link, vegetable lasagna, steamed fish, French dip sandwich. Soup: chicken and wild rice. Vegetables: buttered corn, steamed spinach, vegetable sticks, navy beans.

Tuesday

ASQC meets: The Bay Area Section of the American Society for Quality Control will meet at 6 p.m. April 1 at the Ramada King's Inn on NASA Road 1, Lee Norbraten, director of the ISO 9000 Office, will discuss JSC's ISO 9000 certification effort at JSC. Dinner costs \$9 and advance reservations are not required. For additional information call Ray Swindle at 335-6948.

Cafeteria menu: Special: turkey and dressing. Total Health: roast turkey. Entrees: barbecue spare ribs, liver and onions, baked chick-

en, steamed fish French dip sandwich. Soup: black bean and rice. Vegetables: steamed broccoli, California vegetables, breaded squash, savory dressing.

Wednesday

Spaceland Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. April 2 at the House of Prayer Lutheran Church. For details call Jeannette Kirinich at x45752.

Spaceteam Toastmasters meet: The Spaceteam Toastmasters will meet at 11:30 a.m. April 2 at United Space Alliance, 600 Gemini. For details call Pat Blackwell at 282-4302 or Ben Black at 282-4166.

Astronomy seminar: The JSC Astronomy Seminar will be held at noon April 2 in Bldg. 31 Rm. 129. An open discussion meeting is planned. For more information call Al Jackson at x35037.

Cafeteria menu: Special: Mexican dinner. Total Health: ground turkey tacos. Entrees: beef cannelloni, turkey tacos, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: peas and carrots, ranch beans, mustard greens, Spanish rice.

Thursday

Warning system test: The site-wide Employee Warning System will undergo its monthly audio test at noon April 3. For additional information call Bob Gaffney at x34249.

Cafeteria menu: Special: smothered steak. Total Health: steamed pollock. Entrees: chicken and dumplings, corned beef and cabbage, broccoli cheese quiche, steamed fish, French dip sandwich. Soup: navy bean soup. Vegetables: steamed cabbage, cauliflower au gratin, buttered carrots, lima beans.

Friday

Cafeteria menu: Special: baked

meatloaf. Total Health: baked potato. Entrees: chicken fajitas, ham steak, pork and beef eggrolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

April 8

NPMA meets: The National Property Management Association will meet at 5 p.m. April 8 at Robinette and Doyle Caterers, 216 Kirby in Seabrook. Social and dinner cost \$14. For more information call Sina Hawsey at x36582.

Aero club meets: The Bay Area Aero Club will meet at 7 p.m. April 8 at the Houston Gulf Airport clubhouse at 2750 FM 1266 in League City. For additional information call Larry Hendrickson at x32050.

April 9

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 p.m. April 9 in the Bldg. 3 cafeteria. For details call G.D. Valle at x38835.

PSI meets: The Clear Lake /NASA Chapter of Professional Secretaries International will meet at 5:30 p.m. April 9 at the Holiday Inn, NASA Road 1. Dinner costs \$15. For additional information call Elaine Kemp at x30556.

April 15

Open house: The Information Systems Directorate will host an open house of the Scientific and Technical Information Center from 10 a.m.-3 p.m. April 15 at Bldg. 45 annex. For additional information call the STIC at x34240.

May 10

Sailboat rides: The Clear lake Sailing Club will offer free sailboat rides May 10 at Clear Lake Park. For reservations call Richard Hoover at 996-7716.

Swap Shop

Property

Lease: El Dorado Trace condo, 2-2, FPL, W/D, wetbar, security system, pool, tennis, Jacuzzi, avail 4-7, \$625/mo. 333-8707 or 480-4525.

Rent: League City, The Landing, 3-2-1, new roof, paint and sunroom, lg yard, \$795/mo + deposit. 338-2332.

Rent: Nassau Bay 4-2-5-2, beautiful 1 story, \$1,450/mo + deposit. 338-2332.

Lease: El Lago 3-2-2A, FPL, screen porch, W/D, fenced, refrig, new paint/carpet/tille, lg trees, avail 4/7. 326-6178.

Rent: University Green 2-2-2, 1 floor townhouse, spacious fenced back yard and deck, very neat and clean, \$725/mo + deposit. 335-5652.

Rent: League City, sm 3-2 mobile home off West Calder, fenced yard, lg storage shed/workshop, avail first wk April, \$450. 332-4855.

Sale: Dickinson 3-2-2, \$62k. Chris, 333-6962 or 534-3393.

Sale: Taylor Lake Estates, lg wooded lot 90' x135', waterfront subdivision near JSC, \$39.5k obo, can finance. Don, x38039 or 333-1751.

Sale: Alvin Somerset Place, lots, city water and sewer, restricted subdivision, no mobies, \$5,950. 281-997-2280.

Rent: Arkansas cottage overlooking lake, furnished, fpl, antiques, views, \$50/ day, \$250 wk. Corcoran, x47806 or 538-1681.

Rent: Blackcomb, British Columbia, 2-2 condo, #1 ski resort in NA, W/D, kitchen, heated pool, minutes from ski lift, avail 3-16 to 3-23, 8 days 7 nights, \$200 per night. 998-0659.

Rent: South Lake Tahoe cabin, sleeps 8, 3-2, wood stove, cable TV, VCR, microwave, modern kitchen, W/D, \$85/night. 244-1065 or 326-2866.

Rent: Jamaica Beach, West Galveston, house, 2nd row on beach, great view, all amenities, sleeps 7, winter rates. 488-6796.

Cars & Trucks

'93 Corvette Coupe, 15k mi, 2 tops, theft deterrent system, AC, cruise, traction control, premium stereo, ex cond, \$23k. x34723 or 326-4968.

'87 Ford Aerostar XLT, auto, AC, rear AC, captain's chairs, cruise, tilt, elec instrs, AM/FM/cass, garaged, ex cond, 100k mi, \$3k. 474-4769.

'91 Honda Accord DX, 5 spd, AC, stereo, new tires, 95k mi, ex cond, \$6.5k. Joe, x38851 or 488-1750.

'93 Ford Probe, auto, AC, PS, PB, PW, pwr door locks, cruise, keyless entry, black w/grey interior, 56k mi, \$7.9k. 281-894-0569.

'82 Ford F-150 Supercab XLT, low mi on new engine and trans, new camper shell, ex cond, \$3495 obo. x31144 or 992-8290.

'94 Acura Integra LS, dk green, loaded, tinted windows, alarm system, 35k mi, \$13.4k. 281-482-9517.

'85 Pontiac Parisienne, 4 dr brougham V8, 158k mi, ex cond. 446-9693.

'84 Mazda RX7, 131k, clean, 5 spd, new AM/FM/cass, new brakes, \$900 obo. 281-486-8551.

'84 El Dorado Biarritz, ex mechanical cond, white, red leather, stainless top, \$2.9k obo. x34743 or 713-644-2167.

'88 Chrysler LeBaron, ex cond, low mi, loaded,

\$2.6k obo. x34743 or 713-644-2167.

'90 Dodge Ram van, 3/4 ton, 58k mi, custom interior, 4 capt chairs, carpeted, elec bench seat/bed, TV hookups, trailer hitch, rear air, \$10.5k. x39382 or 388-0579.

'92 Dodge conversion van, white, loaded, 71k mi, wattanty exp 7/98, ex cond, \$12k. x47296 or 281-461-8930.

'88 S-10 Blazer, new Chevy 4.3 motor, ex cond, \$7.5k obo. 946-6248.

'96 Chevy Silverado Z71, Sportside, red w/gray cloth int, loaded, 5 spd, warranty avail, 15.5k mi, \$19.8k. Phil, 244-4216 or 332-2150.

'90 Ford Escort LX, 77k mi, good cond, AC, cruise, auto, \$3.6k. 486-8712.

'93 Pontiac Bonneville SE, less than 7k mi, garaged, ex cond, leather, pwr seats, cruise, alloys, Eagles, dk gray, \$15k. Marie, x37134 or 334-5982.

'89 Mazda 626 LX, PL, PW, AM/FM/cass, sun roof, alloy wheels, ex cond, \$4.3k. Vanessa, x37343 or 713-748-8739.

'96 Mazda 626 LX, pwr windows/locks, sun roof, 12k mi, \$14.5k. 532-2239.

'84 Dodge Prospector Van, sleeps 2, mag wheels, stereo, dual AC, new interior, \$1,950. Rich, x33222 or 538-2870.

'85 Audi 4000S, auto, AC, 4 dr, silver w/dk blue int, new tires, AM/FM/cass, 59k mi, ex cond, \$3.5k. Bobby, x42444 or 488-4382.

'81 Chevrolet Silverado, AC, automatic, good cond, \$3k obo. James, 337-5583.

'92 Chevy Suburban Silverado, loaded, ex cond, white w/maroon int, 120k mi, \$12.9k. Tom, x40048 or 334-2593.

'90 Mazda Miata, red convertible w/hard top, 5 spd, AC, AM/FM/cass, pwr windows, \$8.2k. Karen, x38784 or 326-5385.

Boats & Planes

'91 American Skier Legend inboard ski boat, 351 PCN engine, galvanized trailer, \$13.5k. Mark, 281-421-0306 or 488-6800.

Two stand-up jet skis, 750 SX w/custom engine, 100 hp; 550 SX w/minor modifications, garaged, custom trailer, \$5.5k. 281-282-0669.

'87 Executive Cruiser Pontoon boat, 115 outboard, stereo, canopy, power trim, trailer, depth finder, \$6.2k. Rich, x33222 or 538-2870.

Half ownership in 28' Pearson sailboat, 3 sails, spinnaker, 30 hp, inboard atomic 4 eng, \$5k + \$100/mo maint/slip fee. x47806 or 538-1681.

'93 Crownline 20 family ski-fish seats 8, Mercruiser 305 V8, SST prop, depthfinder, AM/FM/cass, low hours, bimini top, custom cov, Shorelander custom trailer, \$13.9k obo. Don, x38039 or 333-1751.

Outboard engine, 8.0 Hp Evinrude long shaft, \$450. Robert, 334-1677 or 717-8231.

Aluminum prop from 21' Mercruiser I/O 135 hp engine, \$50. Robert, x37739.

'97 Citabria 7GCBC (explorer), Lyc. 160 hp, full gyro pkg, NAV/COM, many extras, \$60/hr. x38879 or 281-482-8213.

Cycles

Peugeot 12-spd ladies' 19-inch bicycle, racing w/roll handlebars, \$40 obo. Vicki, 283-0278 or

335-1287.

'93 Honda CB250 Night Hawk motorcycle, low mi, runs great, good cond, red, \$2k. x38406 or 326-1775.

'85 Honda Interceptor, VF500, 8.6k mi, \$2.2k obo. Mike, x45053 or 484-3392.

Audiovisual & Computers

Macintosh Powerbook 100 laptop, 4MB RAM, 40MB HD, System 7 OS, FD, carrying case, external 170MB HD, some S/W. \$300. 212-9339.

Daisy wheel printer, \$20 obo; VGA video card, \$10 obo; XT clone case w/pwr supply, \$10 obo. x32132.

Power Macintosh 7500, 32MB RAM, 500MB HD, 14.4k fax/modem, Apple video editing card, ethernet, 3 PCI slots, CD-ROM, System 7.5.5, lots of S/W and CDs, kybd, mouse, 100MHz, \$1,450; IBM G50 15" monitor (.28dpi), \$400. 244-2444 or 488-4382.

Computer desk and attached hutch, \$65; printer stand, \$25; metal 2 drawer filing cabinet, \$30. David, x47535 or 334-5862.

486DX 2-66, 16MB RAM, 540MB HD, 3.5" FD, 14" SVGA monitor, keyboard, mouse, \$475; 386DX 40, 8MB RAM, 170MB HD, 3.5" FD, 14" monitor, keyboard, mouse, \$300. Charles, x36422 or 281-326-5073.

Cardinal 14.4 Winmodem MVP144WIN, requires Windows 3.1 or Windows 95, manual and drivers, \$15. Bert, x30868 or 661-6266.

Amiga HW and SW. x30259.

Emerson 14" SVGA color monitor, \$150. x41250 or 713-721-8670.

486DX 2/66, 16MB RAM, 15" monitor, 14.4 fax/modem, 2GB HD, 16 bit sound card/speakers, 2X CD-ROM, 3.5" FD, Windows, misc SW, \$700 obo. 281-286-2604.

IBM Wheelwriter 3 typewriter, \$400 obo. 286-9515.

IBM 6x86-150+, 16MB RAM, 1.2GB HD, 1MB SVGA video card, 14" SVGA color monitor, FD, mouse, Win95 keyboard, mini tower, \$995; PC 5x86-100, 8MB RAM, 205MB HD, 1.44 FD, mini tower w/PS, PCI 1MB SVGA video card, 105/106 Win 95 keyboard, mouse, 14" SVGA Color monitor, \$595. x34487 or 713-941-1211.

New Pentium 100 Intel 16MB RAM, 1.2GB HD, 8X CD, multimedia, 33.6 fax/modem w/voice, 14" .28 SVGA monitor, mini tower, FD, keyboard, mouse, \$1,125. Ayub, x39199 or 713-910-6700.

Dec-Jet b&w inkjet prnter, Win95 compatible, 3 ppm, 2 yrs old, cable, SW, manuals, ex cond, \$75. x38356 or 488-3966.

8MB RAM for Powerbook 5300 laptop computer, \$75. x36623 or 480-1967.

Pets & Livestock

Nubian mix goats, 1 billie, 2 nannies, 2 kids, TB tested, all shots, ex health, very reasonable. x34203 or 409-925-4607.

Adult female tabby cat, spayed, declawed, all shots, good health, litter box, bowls, food, free. Pam or Chris, x30646 or 486-6190.

AKC registered miniature Pinschers, tails docked and dew claws removed, born 2/27/97, ready 4/3/97, 2 blk and tan females, 1 red stag male;

born 3/5/97, ready 4/9/97, 1 blk and tan female, 2 red stag males, \$250 ea. Cheyenne, x31016 or 281-488-6619.

Female terrier mix puppy, 6 mo old, spayed, all shots, house trained, good w/people and other dogs. 326-5180.

Musical Instruments

Lowery "Festival" chord organ w/Magic Genie, bench, book, \$600. 326-1775.

Organ for home or small church, \$250. x38843 or 409-925-5011.

Yamaha DX27 digital synthesizer, \$400; Yamaha Portatone PSR80 keyboard, \$80; Crate KX-15 amp, \$100; stand, \$50. Phil, 244-4216 or 332-2150.

Lost & Found

Lost: Grey neutered male rabbit answers to Miller, approx 4 yrs old. Lost in Bay Green subdivision on 1/25/97. Reward if found. x48133 or 281-480-1266.

Household

Washed oak finish 7 piece Chrome Craft dinette set, \$275. 713-286-7530.

Small chest freezer, \$75; 13" color video monitor w/speaker, works as TV when used with VCR, \$45; lg hobby horse, \$15. x32132.

Custom formal dining table, 4 x10 x1 1/4" glass w/10 off-white parson's chairs, \$1500; off-white sofa and love seat, \$600; white wash oak end/coffee tables, \$300; white wash oak entertainment center, \$450; almond upright freezer, \$150, full sz bed, \$40; Wedlo stomach/lvr body exercise machine, \$75. 326-6178.

Lexington, Bob Timberlake green leather sofa and chocolate oversized matching leather chair, \$800/\$600 or \$1,200/both. 286-9515.

Twin bedspreads, custom made by Dillard's, flower print w/shrimp colored background, like new, \$35 ea. 281-337-4664.

Two full sz country style sofas, solid denim blue w/sm white stripe every 5", 1 1/2 yrs old, \$400 ea. 482-1504.

Love seat, 6' long, ex cond, \$100. Steve, x36725.

White kitchen table w/4 chairs, 42" round, ex cond. Ron, x48200.

Desk w/chair, 3 drawers, off-white w/brass pulls and appointments, glass top, \$125; pair of upholstered chairs, \$75; round carved table, approx 24", heavy glass top, \$50; designer oriental coffee table w/imported glass top, \$250; entertainment center, unused, \$275. 488-5564.

Antique mirror w/shelves, \$80; maple swivel rocker, good cond, \$50. 480-3424.

Italian design bedroom set, full sz, antique green, dresser, 5 drawer chest, 2 night stands, ex cond, \$850. Magdi Yassa, 333-4760 or 486-0788.

Dining table, \$75; electric washer, needs work, \$50. 48

Right: The STS-83 crew takes a break during the Terminal Countdown Demonstration Test. From left are Mission Specialist Don Thomas, Payload Specialist Greg Linteris, Pilot Susan Still, Commander Jim Halsell, Mission Specialist Mike Gernhardt, Payload Specialist Roger Crouch and Payload Commander Janice Voss. Center: The Microgravity Science Laboratory is installed into the payload canister for shipment to Columbia's cargo bay.



NASA Photos KSC-97EC-461 and KSC 97PC-243

Spacelab Sets Stage for Space Station

Microgravity Science Laboratory tests hardware, procedures for next generation of experiments

By Karen Schmidt

An international team of scientists will lay the foundation for space station work during the STS-83 mission.

Columbia is set to lift off from Launch Pad 39A at Kennedy Space Center at 1:01 p.m. CST Thursday carrying the Microgravity Science Laboratory nestled in its cargo bay. Four space agencies developed the 33 investigations for the Spacelab that will test hardware, procedures and new facilities for use on the International Space Station.

Representatives from the German Space Agency, European Space Agency and the National Space Development Agency of Japan are joining NASA's seven crew members in their search for procedures that may be used on the station. Commander Jim Halsell, Pilot Susan Still, Payload Commander Janice Voss, Mission Specialists Mike Gernhardt and Don Thomas, and Payload Specialists Roger Crouch and Greg Linteris will spend 16 days on low-Earth orbit conducting a variety of science experiments in the versatile research lab.

"Scientists and investigators are coming from around the world converging on the Payload Operations Control Center (at Marshall Space Flight Center)," Halsell said. "From that location they will be talking to us on orbit, to help us in our efforts to get the most science during the 16 days that we'll be in space."

The crew will split into two teams and work around the clock conducting experiments with various materials and liquids and documenting changes in microgravity. The Red Team will consist of Halsell, Still, Thomas and Linteris. Voss, Gernhardt and Crouch will make up the Blue Team.

"This is the last materials processing Spacelab flight and will be the heaviest and most video-downlink intensive Spacelab mission to date," said Rob Kelso, STS-83 lead flight director. "It brings us to the end of an era of all the Spacelab missions that started back on STS-9."

STS-83 will close an era and open doors for future microgravity experiments on the ISS. The Expedite Processing of Experiments to the Space Station, or EXPRESS, rack will house two experiments and engineers will have the opportunity to check the design, development and adaptation of the rack for use on the space station. One experiment will study changes that occur when a substance makes the transition from liquid to solid and back again.

In addition to materials science, the rack will contain a variety of plants that will help researchers learn more about growing food and healing plants in space. The crew will grow clover and spinach in a small greenhouse.

"We are also taking plants of sage and periwinkle," Thomas said. "These plants have great pharmaceutical applications down here on Earth. We hope that this research we are performing on this mission will help benefit those on Earth through the development of good pharmaceutical drugs."

New expert software also will be tested during STS-83. The software is designed to reduce the number of people required to

support station activities and give immediate information about each experiment and mission operations.

The crew will conduct experiments with metals in the German-built Electromagnetic Containerless Processing Facility, called TEMPUS for its German acronym.

"We can electromagnetically levitate a small metallic sample and heat it up and cool it down all in a containerless fashion so we don't get any contamination from the outside environment," Thomas said. "In this way we can get some new, unique structures."

Metal fusion studies also will be conducted during the 16-day mission. The large Isothermal Furnace will heat metal alloys to 2,912 degrees and scientists will study how metals fuse together during cooling.

"The purpose of this is to be able to form homogenous materials that are critical for building super high speed computers or ultra small electronic chips," Crouch said. "A lot of these experiments will be automated and controlled from the ground and in fact, part of the commands will come from Japan, through NASA, then up to the space shuttle. We are practicing worldwide control of these experiments."

Several combustion experiments will look at how fire behaves in microgravity. The combustion module contains a 24-gallon chamber, a gas chromatograph, computers and support equipment and seven

cameras for documentation.

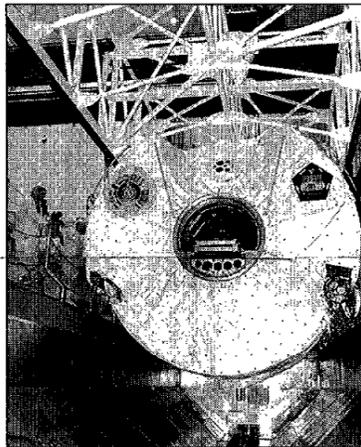
"By doing combustion experiments in microgravity, we can learn things about the basics of the combustion phenomenon that can help us produce more efficient airplane and car engines, power plants, home heating furnaces and boilers," Linteris said. "We can gain a basic understanding which will help us in fire safety, energy production and to reduce pollution."

Several experiments will measure microgravity levels and movements of the crew so that scientists can develop space station experiments that will not be perturbed by everyday activity. They also will study the shuttle's orbit to determine whether friction is disturbing onboard experiments. The Orbital Acceleration Research Experiment will give scientists the opportunity to place Columbia in an attitude that benefits the experiments.

Glovebox experiments will look at ways of strengthening metal alloys and evaluating how liquids react to ultrasonic radiation pressure exposure.

While the crew is busy in the MSL, a hitchhiker experiment, the Cryogenic Flexible Diode, also will be working in Columbia's payload bay. This experiment will test thermal control technology that is becoming essential for spacecraft telecommunications. Since most spacecraft electronics are packed tightly, heat pipes are needed to remove and redirect heat and cool the electronics so that they may function normally.

The crew also will have the opportunity to talk with amateur radio operators and students from around the world through the Shuttle Amateur Radio Experiment. Columbia is scheduled to return to KSC's Shuttle Landing Facility at 6:19 a.m. CDT April 19. □



Above: McDonnell Douglas Space Systems engineer Scott Myers, left, answers questions from STS-83 crew members from right, Commander Jim Halsell and Mission Specialist Mike Gernhardt, during the crew equipment interface test at Kennedy Space Center. Right: The crew receives briefings on hardware configurations of the MSL in the Operations and Checkout Bldg at KSC.



NASA Photos KSC-97PC-126 and KSC-97PC-124

Cosmonauts' work continues amid minor problems

Astronaut Jerry Linenger passed the halfway point of his stay aboard the Mir Space Station last week as he and his Mir 23 crew mates continued their science investigations in and around some minor problems with the station's attitude control system.

Last Wednesday the primary angular rate sensor in the Spektr module on Mir failed, which prompted the motion control system computer to switch automatically to a backup system. During this three minute hand over, the station's gyroscopes began maneuvering the station in all three axes. When the swap to the backup sensor was completed, the rotation of the station was beyond what the gyroscopes could compensate.

The crew switched off the attitude control system placing the station in what is called 'free drift' and then used onboard thruster

jets to stabilize its attitude. For most of the day Mir was in a stable attitude called gravity gradient. Because this attitude did not keep the solar arrays constantly pointed at the Sun to charge the onboard batteries, the crew turned off the gyroscopes and other equipment to conserve power. Late in the day flight controllers uplinked a new attitude maneuver to the motion control system computer and the crew restarted the gyroscopes.

With the primary angular rate sensor—called Omega—considered failed, a workaround is being considered that would have the crew reroute cables to another Omega in one of the other modules. Currently the station's attitude control is being managed by

the primary sensor on the backup unit, called ORT 1. By the end of last week, the station was back in its normal operating attitude, called an inertial attitude, which maneuvers the station's solar arrays to always point toward the Sun.

Components to bypass a suspected clogged filter in one of the oxygen-generating Electrons will be shipped to Mir aboard the Progress resupply vehicle, scheduled to launch April 6. This workaround will partially restore the use of the Electron unit, which normally uses the process of electrolysis to separate oxygen out of the onboard processed waste water and return it to the cabin air. The solid fuel oxygen generators

will continue to be used to supplement the Electron even after the Progress arrives.

Progress also will deliver 60 additional candle-type oxygen-generators to Mir. On average, the crew is burning three candles per day to maintain acceptable oxygen levels aboard the station.

The space walk by Linenger and Mir 23 Commander Vasily Tsibliev remains scheduled for mid to late April. They will wear newly designed spacesuits also stored aboard the Progress resupply vessel.

While life continues aboard Mir, Foale is nearing completion of training in Russia and will return to the U.S. in early April for the final weeks of training prior to the STS-84 launch. Astronauts Wendy Lawrence, Jim Voss, Dave Wolf and Andy Thomas left Star City last week for survival training in Siberia.



Co-ops bring dreams to JSC

This is the final article on the women of JSC for Women's History Month.

The young women in JSC's co-op program recently told the Federal Woman's Program Manager they want to go places and that their itinerary includes stops at NASA, the International Space Station, the Moon and Mars.

"They understand that the way to get there is through their own determination, dedication, hard work, education and dreams for a future which seems bright and limitless," said Federal Program Manager Jessie Hendrick.

Nine of the 11 current co-ops sat down during Women's History Month and spoke to Hendrick about why they chose engineering and NASA. Of those nine, eight are determined to enter the astronaut corps.

"I'm a space nut," declares Jennifer Gruber, who is working on a dual BS/MS program in aeronautical engineering at Boston University. She said she was inspired to pursue a career at NASA after seeing the movie "The Right Stuff" with her parents. She told them that she wanted to be an astronaut and they did not discourage her.

Laura Eadie, a mechanical engineering major at Purdue said after attending space camp in high school she made plans to become an astronaut.

"I went to Purdue because that is where so many of the astronauts come from, with the intention to co-op with NASA," Eadie said. She is currently working in a back room of Mission Control and enjoying every minute.

Living in the environment of space inspired co-ops Amy Fischer, Christie Nance and Tara Angstadt to become part of the program.

"Dad was in the Air Force, so I've grown up in the environment,"



JSC Photo by Robert Markowitz

JSC's current female co-ops bring to JSC determination, dedication, hard work, education and dreams for a future that seems bright and limitless. Back row from left are Theresa Debban, Christie Nance, Loretta McDonald, Laura Eadie and Tara Angstadt. Seated from left are Whitney Knudson, Larissa Smit, Jennifer Jones and Jennifer Grubber. Not pictured are Barbara Williams and Amy Fischer.

Fischer said. "NASA is a huge, cool place and I've always wanted to come here." Fischer is an aeronautical engineering student at the University of Michigan currently working on parafoil technology for the X-38.

"This would be my dream job and I went for it," said Nance, an aerospace engineering major at Georgia Institute of Technology and working in payloads.

"I chose mechanical engineering because there are more options in what I can do," said Angstadt, a mechanical engineering major at Texas A&M University. "NASA was my dream. I got several co-op offers, but here was where my heart was."

Larissa Smit, a mechanical engineering and math major at Southern Methodist University, was encouraged to apply at JSC by the co-op director at the university. During her co-op tour, Smit helped develop the wall coverings in the chamber for the Advanced Life Support Program Test Project.

Jennifer Jones, an aeronautical and astronautical engineering major

at the University of Illinois said working as a JSC co-op is a great opportunity because the co-ops get to do real work.

"I've always liked the math and sciences," Jones said. "Space is the new frontier, there's so much that is unexplored."

JSC co-ops also look toward the future and hope to return after completing their education.

"When I interviewed with NASA, I thought 'Wow' I could make things happen and be part of the big picture and help to change the way people live," said Loretta McDonald, a recent graduate from Purdue with a degree in computer and electrical engineering. "I'm happy to say that I will be working here permanently. I never dreamed that could happen."

"Whether they work at NASA or at an aerospace company, these young women, with their dreams and ambitions, will be a part of creating the future of our nation's space program," Hendricks said. "Their vision and work will become a part of space history."

Signs assist during evacuation

By Mary Peterson

JSC's Occupational Safety Office has established areas of rescue assistance for employees needing help to exit buildings during emergencies.

"New signs were recently installed in JSC buildings indicating locations where employees requiring evacuation assistance can be accommodated," said Stacey Nakamura, chief of the Health, Safety and Environmental Compliance Office. "These Areas of Rescue Assistance, or ARAs, are being included into evacuation plans for each building and ensures that assistance is provided."

An employee who requires assistance is someone who cannot exit the building via the staircase. Employees in wheelchairs, on crutches, who use walkers, who are hearing or visually impaired, pregnant, who have heart/lung conditions, or any disabilities that hinder mobility should notify their supervisor that they require assistance in exiting during emergencies.

During an actual emergency, personnel will initiate the rescue all employees at the primary ARA's of all floors below the fire floor via elevator. Stairs will be used to rescue employees on the fire floor and above unless the danger on the fire floor is under control and cannot affect elevator evacuation. No evacuation will be done in the event of a false alarm, malfunctioning alarm system or other non-emergency situations, Nakamura said; but anyone waiting for rescue assistance will be notified of the condition before the emergency is terminated.

"Elevators may be used only if emergency personnel accompany the employee," Nakamura said. "The elevator will be checked for safe operation to be sure there is no danger of being trapped and risking suffocation. If the elevator is unsafe, employees requiring evacuation assistance will be evacuated manually."

Should an employee visit another building and hear an alarm, that

employee should evacuate to the primary ARA and ask someone to be their "buddy." If a buddy is not available, the floor fire warden should be notified that assistance is needed.

Nakamura added that in the event an employee requiring evacuation assistance is working off-hours and the alarm sounds, that person should go to the primary ARA, and while in route, activate a fire alarm pull box or call x33333 to bring emergency personnel to that floor.

Supervisors should know which employees cannot perform a routine evacuation, Nakamura said. Those employees, in turn, should be schooled in proper evacuation procedures, as well as having a "buddy" assigned to see that safe evacuation is accomplished.

For more information, including details on the responsibilities of fire wardens and supervisory personnel, contact Tracy Ferguson of the Occupational Safety Office, mail code NA3, or call x33548.

International travelers now have medical help

Employees traveling to foreign countries now have access to a new program for assistance in dealing with a variety of situations.

NASA gives employees the opportunity to access the services of International SOS Assistance Inc., that provides medical, personal and travel assistance.

"SOS is a 24-hour, 365-day-a-year program," said Lynn Hogan of JSC's Clinic. "NASA has provided employees with another tool to make travel less stressful."

Medical assistance ranges from sending a doctor to an employee's location to conducting emergency evacuation to hospitals, Hogan said. Medical services cover everything from pre-trip medical referral information to emergency services while

abroad. Personal assistance ranges from helping employees replace lost documents to legal access. Travel assistance covers a broad range of situations employees can encounter while incapacitated due to a medical condition.

Hogan will hold briefings next week to explain the SOS program. Briefings will be held at 9, 10:15 and 11:15 a.m. Monday in the Bldg. 30 Auditorium. Briefings are open to all JSC civil service and contractor employees who are sent by NASA on official international travel anywhere in the world.

Before traveling, employees must receive an access card in order to use the SOS services. To obtain an access card and for more information on SOS call Hogan at x37790.



total health

Earth Day moves to Gilruth

Activities for JSC's Earth Day celebration on April 22 keep growing so organizers have move the celebration to the Gilruth Center.

To kick off this year's event, the Houston Federal Executive Board is sponsoring a 5K fun run and 2K walk at 9 a.m. April 19 at JSC. The event is open to all federal and contractor employees and their families. The cost is \$6 and includes a T-shirt, music, astronaut autographs, snacks, beverages and door prizes. Registration forms are available by calling Jo Kines at x33218 and must be postmarked no later than April 2.

During the Earth Day celebration on April 22, KTRH radio will broadcast the KTRH Garden Line live from 10 a.m. - noon at JSC. Employees are encouraged to bring all of their gardening questions and concerns. In addition, an original art coloring contest is planned. Contact Dawn Fadner at x37243 for a copy of the coloring page. Entries must be submitted by April 18 and will be displayed at the Earth Day event.

Model solar cars will be displayed and plans are forming for races. The Roundup will publish race times.

Workshops, exhibits, free prizes and give-aways once again are being planned for this year. Exhibitors include; Sierra Club, Bicycling Club, Galveston Bay Estuary Program, Canoe Club and Houston Museum of Natural Science. Workshops on Birds of the Texas Coast, Air Quality in the Houston Area and Environmentally Designed Homes will be presented each hour from 11 a.m.-2 p.m. during the event. A complete listing of the times and locations will be published in the April 11 edition of the Roundup. Employees also are reminded to get Earth Day photographs to Melissa McKinnley, Bldg. 445, Rm. 750, x33127, by noon April 18. Prizes will be awarded for the best photos. Earth Day volunteers are still needed and employees may contact Kines for more information.

Roundup returns in April

Today's issue of the Space News Roundup will be the last time employees receive a weekly paper.

The new Roundup will return on April 11 as an eight-page publication sporting a "new" nameplate. The Public Affairs Office will continue to keep employees up-to-date on breaking space program news by way of the Daily Cyber Space Roundup.

With publication scheduled for every other Friday, deadlines will be Friday, three weeks before publica-

tion. An easy way to remember this deadline is that it falls on the Friday the Roundup is not published. For example, if a club would like to post a meeting notice April 25, it must submit the information to Managing Editor Karen Schmidt at Bldg. 2 Rm. 181 or e-mail at kschmidt@gp301.jsc.nasa.gov by close of business April 4. Items that must meet this deadline include Dates and Data submissions, contractor and employee news and other items of interest to the JSC community.

Employees tour 'Triple 7'

(Continued from Page 1)

made his first trip to Houston to meet the teams that are working on the International Space Station and Space Shuttle Programs.

"There are a lot of similarities in what we have done here and the space station," Mulally said. "All the people at NASA ought to feel a tremendous sense of pride when you look at the Triple 7. The technol-

ogy that went into the Triple 7, we did together. All of this technology was led, sponsored and nurtured by NASA. This is just another dynamite result that shows what happens when NASA and industry work together."

Employees toured the 440 passenger airplane that weighs 580,000 pounds and has a wingspan of more than 199 feet.